Existing Management and Research Work Group Report

Executive Summary

The Existing Research and Management Workgroup met 16-20 July 2001. We identified 26 strategic issues and 67 goals/action items during the week-long meeting, most of which could be categorized as issues that either (1) impinge negatively on existing management programs, (2) create disunity and friction within the Division and thereby decrease efficiency, productivity and cooperation among its staff, (3) cause reactive rather than proactive management, (4) represent opportunities or needs that remain unmet, or (5) influence the productivity and job satisfaction of the staff. In spite of the length of the list, it was apparent that many of these issues coalesce into a few underlying or unifying problems. Although we did not specifically rank these issues by priority or importance, it was apparent that several topics were pervasive and of broad interest to the staff. These were grouped into 3 themes: (1) Workloads and Organizational Structure, (2) Communication and Standardization of Research and Management Practices, and (3) Career and Professional Development. We also identified a variety of important issues relevant to our mission of wildlife conservation and public service, which we simply categorize as (4) Wildlife Management Issues. Briefly, our results are as follows.

Workloads and Organizational Structure

Virtually every participant noted that chronically high workloads are: 1) reducing the quality of our work; 2) causing some core responsibilities to be neglected; 3) precluding training; and 4) interfering with communication (e.g., management staff participating in research projects). These issues reduce staff morale and could make it difficult to attract and retain high quality employees in the future. Supervisors, researchers and managers alike are experiencing high workloads; however, this problem is most pronounced for Area Biologists. Some factors that have increased workloads include human population demographics (more users), increasing public participation in wildlife management, dual state-federal management, increased involvement by AB's in the BOG process, increased conflicts among user groups, and increased use by non-consumptive users.

We discussed the current organizational structure of DWC to assess whether this was contributing to high staff workloads. In our brief discussion of regions no one felt there was a compelling reason to change the status quo. The 4 regions are each unique with regard to wildlife, people and issues, and differences are greater among regions than within them. We discussed the area office model at length and reached consensus that this decentralized model should be maintained. We concluded that high workloads are not the result of current Division structure. Rather, they are being caused by job demands increasing more rapidly than staffing.

Although we agreed the area office model should be maintained, the roles of some existing positions, especially Area Biologists, may change in the future. Area Biologists may become team leaders that coordinate planners, education outreach specialists,

species experts and researchers. Regional staff may be stationed in area offices to share workloads.

It was generally agreed that most, if not all, area offices were experiencing excessive workloads. Staffing was too complex to allow this group to consider specific positions. Instead, we recommended the Division conduct a systematic evaluation of staffing needs. We favored contracting an outside source to conduct the audit. We agreed the Division should ensure flexibility among regions, area offices and statewide programs when creating and filling new positions: no single approach will probably work throughout the Division.

Communication and Standardization of Research and Management Practices

The workgroup identified a suite of issues that stem from two sources: lack of communication and standardization of policies in research and management programs. Among the lengthiest of our debates was the lack of clarity in the role of research in the Division. In part, this concern about the role of research emanates from the opinion of many that research in the Division is often not focused on problems relevant to management. However, relevancy is a matter of perspective, and several perspectives were expressed. To solve this important communication gap, we suggest that research projects be evaluated based on a defined set of criteria, and that these criteria should include management relevancy. In conjunction, the workgroup recommends that a review panel or committee, represented by research, management, and outside scientific representatives, evaluate research projects. In addition to direct management focus, the workgroup recognized that the Division should continue to conduct long-term and "ecosystem" (multi-species) research, although we did not debate the Division's degree of devotion to such research.

In a parallel manner, the workgroup recognized similar deficiencies in the way management S&I are conducted. Rarely are S&I activities scrutinized by the Division to determine if management needs are being met, or whether S&I activities are being conducted in a statistically or scientifically sound manner. The workgroup recommended a review process for management similar to that proposed for research activities.

Lack of communication and understanding is the root of many other problems in the Division as well. The workgroup encourages researchers and managers to communicate more effectively, recommends that research staff be more involved in public service, and recommends that both management and research staff explore ways to more effectively coordinate activities and projects with Federal agencies to allow us to maintain our concentration on our agency priorities. The workgroup also recommended that the Division maintain and enhance our role as public educator on wildlife issues throughout the State.

Career and Professional Development

The workgroup recognized the critical role that career development and pay equity plays in the morale of the staff. We discussed these issues briefly, but moved to other issues because we were informed that these important issues are already being

considered and acted upon by the Division. Nevertheless, in support of this important work, we made several recommendations, including (1) development of a more effective career ladder for management and research biologists, (2) working to achieve pay equity with Federal and private agencies, (3) addressing training, continuing education, and ability of staff to travel to professional conferences (a form of career development). We also recognized the significant lack of diversity in staff of the division, and recommend the Division strive to recruit especially Alaska natives and women into the Division. One mechanism to achieve this might be to develop a more effective internship or cooperative education program.

Significant Wildlife Management Issues

In addition to the internal issues identified above, the workgroup identified a number of specific wildlife management issues that should be examined and evaluated by the Division. The list is too long to discuss in detail here, but included such issues as how we should be involved in predator management, subsistence, and co-management, how we should incorporate traditional knowledge (a significant issue in the public scoping document), the need to understand the effects of ORV's on wildlife and their habitats, cumulative effects of development and resource use, the role of human dimensions in wildlife management, marine mammal management, State refuge and special areas management and research, nuisance wildlife programs, the effect of anadromous fish on wildlife populations (e.g., brown bears, bald eagles, ospreys), and the role and effectiveness of the Advisory Committee system.

Background

*Group members***:**

Pat Valkenburg, Bruce Dale, Don Spalinger (co-chair), Coleen Matt, Tom Paragi, Gino Del Frate, Dave Person, Dan Rosenberg, Jim Dau (co-chair), Neil Barten
DMT liaison members: Matt Robus and Kim Titus.

The group met from July 16-20, on the UAA campus in Anchorage. Spencer Amend, of Dynamic Solutions Group was the facilitator of the group, and Mark Burch, Sport Fish Division, acted as the recorder for the meetings.

Strategic Issues

The workgroup identified 26 Strategic Issues, or issues of high importance to the workgroup members (or their constituents). To simplify their presentation, we group these issues into 4 general categories as indicated in Figure 1. Because of the diversity and complexity of issues, we were not capable of addressing most of them in the depth required for project implementation. We attempt here to summarize the opinions and conclusions of the group, realizing that much work remains to be done on each of these

issues. The remainder of this report consists of (1) a summary of the individual Strategic Issues (or groups of Strategic Issues if they were similar), including the goals or action items developed to accompany each issue, (2) an appendix of the meeting notes recorded by Mark Burch, and (3) an appendix of proposed projects to accompany each goal or action item. The latter appendix was developed over the last few hours of the workshop, and were not discussed or edited by the group as a whole. Hence, they may represent the ideas or interpretations of individuals of the group, but not the consensus of the group.

Figure 1. Workgroup Issues of High Concern

1. Structure and Function of Organization
    a. Area Office Model
        i. Staff support issues
    b. New Area Offices
    c. Species Experts
2. Communication and Standardization of Research and Management Practices
    a. Research Priorities
        i. Technology development
    b. Management Priorities
    c. State-Federal Collaborations
    d. Public Service by Staff
    e. Educatory Role of Division
3. Career and Professional Development
    a. Career paths for researchers and managers
        i. Pay scale issues
        ii. Diversity in the Workforce
    b. Training and continuing education
        i. Conferences and meetings
    c. Workload Relief
4. Wildlife Management Issues:
    a. Political Damage Control
        i. Predator management
        ii. Subsistence
    b. Public Process
        i. Co-management and traditional knowledge
        ii. Incorporating human dimensions
        iii. The Advisory Committee System
    c. Marine Resources
        i. Marine Mammals Management
        ii. Oceans and Wildlife Program
    d. Land Management and Research
        i. State Refuges and Critical habitat Areas
        ii. ORV Impacts on Wildlife and their Habitats
        iii. Land management decisions (influence on other agencies) and Cumulative Effects
    e. Nuisance Wildlife Program
    f. Key species and ecosystem integrity and sustainability
        i. Impact of Fish on Wildlife

1. Structure and Function of Organization

a. *Area Office Model*

STRATEGIC ISSUE 26: REVIEW THE AREA OFFICE "MODEL" WITH RESPECT TO REEARCH AND MANAGEMENT.
Goal 63: Systematically review whether additional area offices are needed
Goal 64: Maintain decentralized area office model.
Goal 65: Increase the quality of the biology accomplished at area offices.
Goal 66: Maintain or develop an organization structure that is appropriate for each regional or area office.
Goal 67: Review and evaluate the workload and organizational structure of each area office to determine the appropriate and staffing to cover duties and needs.

We discussed the current structure of DWC to assess whether this was contributing to high staff workloads. In our brief discussion of regions no one felt there was a compelling reason to change the status quo. The 4 regions are each unique with regard to wildlife, people and issues, and differences are greater among regions than within them. We discussed the area office model at length and reached consensus that this decentralized model should be maintained. We concluded that high workloads are not the result of current Division structure. Rather, they are being caused by job demands increasing more rapidly than staffing.

i. Staff support issues

Staffing was too complex to allow this group to consider specific positions. Instead, we recommended the Division conduct a systematic review of staffing needs. We favored contracting an outside source to conduct the audit. We agreed the Division should ensure flexibility among regions, area offices and statewide programs when creating and filling new position: no single approach will probably work throughout the Division.

b. *New Area Offices*

We briefly discussed this in the context of workloads and organization and agreed that the establishment or reopening of area offices (e.g., Seward) may help reduce the overall workload. This topic should be included in the Division review.

c. *Species Experts*

STRATEGIC ISSUE 15: SHOULD WE HAVE SPECIES EXPERTS?
Goal 39: Identify species, guilds or ecological areas for which we need to develop expertise.

The issue of specialization within the Division impinges on both career and professional development of staff, and on the Division's needs and mission. On the one hand, it was deemed crucial that the Division be capable of assigning direction to research or management staff in accordance with changing priorities. On the other, it is apparent that, especially for highly trained and productive staff, "arbitrary" reassignment can lead to loss of efficiency, lack of commitment, and frustration for some individuals. In others, it may stimulate intellectual growth and productivity.

The ability of the department to maintain species or process (e.g., on predator-prey, habitat, species guilds) experts is advantageous in many cases. The public, and wildlife resources, benefit when ADF&G can provide highly accredited experts to testify or advise on issues of contention or when resource management conflicts arise. Hence, it is to our benefit to maintain species or process experts in some arenas. However, it is also apparent that we cannot afford the luxury of maintaining an expert staff on all species that we manage, and that as the Division's priorities change, the reassignment of an individual's duties should be possible. The lack of time and diversity of opinions on this subject did not allow the workgroup to identify or define particular species experts or policies for reassigning individuals. The workgroup therefore recommends that the DMT develop a method (e.g., task force or committee) to identify species, guilds, or ecological processes for which the Division will maintain specialists or experts, and develop policies for fairly and appropriately adjudicating changes in duties or areas of research of staff.

2. Communication and Standardization of Research and Management Practices

a. *Research Priorities*

STRATEGIC ISSUE 1: WHAT ARE THE ROLES OF MANAGEMENT AND RESEARCH? Each has a concept of their own role and the role of the other, which don't match.
STRATEGIC ISSUE 7: HOW SHOULD WE SET RESEARCH PRIORITIES?
Goal 1: Maintain a high quality research component of DWC, including long term, fundamental research.
Goal 1A: Maintain high quality research on ecological systems.
Goal 2: Maintain and enhance high quality research on management related topics that include nongame and human dimensions.
Goal 6: Establish a committee process to review research proposals that involves managers, researchers and the scientific community.
Goal 7: Enhance and maintain communication among and between researchers and managers.
Goal 21: Prioritize research to reflect management needs.
Goal 23: Avoid duplication of research projects within and among regions.
Goal 24: Coordinate and communicate research programs between regions to avoid duplication.
Goal 32: Improve coordination between statewide and regional programs.

It was apparent among the workgroup members that the role of research in the Division is an extremely important issue, for both managers and researchers. Many in the management staff perceive that Research often does not address issues relevant to management, that management has little or no influence on, or participation in, research activities, that Research is not accountable for its products, that communication between research and management is not adequate, that management budgets continue to erode while research budgets continue to increase, and that Research is isolated - or insulated - from public service and the public process. Although many of these perceptions are inflated, some are incorrect, and others are true to a degree, all illustrate an underlying communication and cooperation problem between research and management staff. To help alleviate these problems, the workgroup discussed several potential solutions.

First, the workgroup agreed that the Division should continue to maintain a high quality research program, with components including both long-term ecological (e.g., mechanistic) research, and short-term problem-specific research. Likewise, the Division should maintain or support some level or degree of basic research, but a large proportion

of the research should be applied to management issues. Secondly, the Division should establish a system for prioritizing research programs, for evaluating and prioritizing research projects, for monitoring the quality of research projects, and for coordinating research within and among regions. Although the workgroup did not establish criteria for evaluating and funding research projects, it did agree that some level of priority be given to research that bears directly on current management issues, and that the evaluation process would involve researchers, managers, and ad hoc members of the appropriate scientific community. Finally, we agreed that more resources and time be placed on improving communication among and between researchers and managers.

i. Technology development

STRATEGIC ISSUE 12: HOW TO IMPROVE THE TECHNOLOGY ASPECTS OF HOW WE DO BUSINESS?
Goal 33: Develop the Division's capacity to use GIS tools in both research and management.
Goal 34: Enhance the Division's capacity for analytic work.
Goal 35: Emphasize and enhance development of new techniques and technology.

New technology has the potential to increase our efficiency and productivity, and it is one of the only ways to open new vistas of understanding or comprehension of wildlife and their population regulation. The Division has a long history of pioneering new techniques and leading the development and adoption of new technology for research and management applications. This undoubtedly is a significant reason the Division remains a leader in wildlife conservation. We need to consciously continue, and perhaps increase, this important effort to maintain this leadership. The Division is falling behind in several arenas: our current GIS capabilities are inferior to those of most federal agencies with which we work[1], our modeling and analytical capabilities are limited, and our capability to develop and deploy new technology is haphazard and underfunded.

To address these issues, the workgroup recommends the expansion and upgrading of our GIS capabilities (particularly adding staff, and providing training opportunities for those who could benefit from GIS technology), enhancing our analytical capabilities by offering more training opportunities for staff in statistical and modeling techniques and perhaps increasing analytical staff support, and by increasing funding targeted specifically for the development of new techniques and technology.

[1] With respect to the access to the technology, not necessarily our expertise in using it.

b. *Management Priorities*

STRATEGIC ISSUE 6: HOW SHOULD WE SET MANAGEMENT PRIORITIES?
Goal 17: Understand the needs, requirements and demands of the public.
Goal 18: Understand the impacts on wildlife resources of such things as ORV's, mining, and land use policy.
Goal 19: Understand wildlife populations and trends.
Goal 20: Establish a systematic process for evaluating projects, defining problems, setting priorities, evaluating results, allocating resources across area, regional, and divisional lines.

We distinguished management priorities, management actions and management programs. Management priorities are often determined for us by the public: the most controversial issues usually receive the highest priority. High demand for a limited wildlife resource and intangible human values regarding wildlife and wilderness often drive controversy and are beyond our control. Management actions are usually the products of the BOG (regulations) or Department (emergency orders and some activities). Management programs are typically species-specific and are governed by management priorities and limited funding.

We can influence management actions by educating the public and providing sound information regarding wildlife populations and human use to the BOG. It is imperative that we obtain high quality information. Management programs encompass most of our activities but we focused largely on population monitoring activities. We identified a number of criteria to consider when allocating staff and money among management (S&I) programs: 1) level of controversy surrounding the population; 2) need for population information; 3) whether other agencies/organizations are collecting the information; and 4) whether this is a long term monitoring program or infrequent activity. We recommended systematically reviewing management programs (not necessarily annually) just as we recommend for research projects; however, we did not decide who would conduct the review. We also recommended management programs be evaluated in relation to research projects, human dimensions work, statewide programs and other activities that ultimately compete for limited staff and funding. Management programs should be coordinated with these other programs in order to best utilize the limited funding we obtain. We discussed the idea of the area biologist as a "Team Leader" whose functions would be coordinator of programs and functions within his/her area. We agreed there is no 1 set of criteria to evaluate these components of Division work. We did not favor individual managers competing against each other and researchers through some form of proposal process for funding S&I programs.

c. *State-Federal Collaborations*

STRATEGIC ISSUE 5: HOW DO WE ATTRACT FUNDING FOR RESEARCH FROM EXTERNAL SOURCES WITHOUT BEING LEAD AROUND BY THE NOSE BY WHAT OTHER AGENCIES WANT TO DO?
Goal 14: Annually and periodically, communicate the division's and each region's goals and needs to the federal government.
Goal 15: Understand the Federal research funding and planning process.
Goal 16: Cooperatively develop research priorities with federal wildlife and land management agencies

All too often, the Division's focus in research and management is diverted by the presence of funds and/or the priorities of federal agencies. In many cases, these funds and collaborations benefit our efforts and dovetail with our own priorities. Often, however, they end up redirecting our efforts in ways that are detrimental to our productivity and tangential to our priorities.

The workgroup discussed various problems, benefits, and methods of working with federal agencies to keep these problems to a minimum, while allowing federal collaborations to enhance our mission and goals. We suggest several avenues: (1) establish our priorities for research and management, and communicate these to federal agencies in a timeframe that allows us to cooperatively develop funding plans that fit within the federal budget cycle. (2) Learn more about the federal budget cycle and their priorities. (3) Collaborate with our federal counterparts to develop research and management plans. An example of how this has been relatively effective is the Interagency Brown Bear Study Team on the Kenai Peninsula, where management and research leaders in ADF&G, USFS, USFWS and NPS meet quarterly to set research agendas and funding initiatives for work on Kenai Brown Bears among all participating agencies.

c. *Public Service by Staff*

STRATEGIC ISSUE 4: RESEARCH AND MANAGEMENT STAFF LACK TIME AND INCLINATION FOR PUBLIC SERVICE
Goal 13: Position descriptions (PD's) for managers and researchers should include responsibilities for public service.

The public is better served by managers that participate in research projects, and by researchers who interact with the public and assist with management programs, than by staff that work solely within their respective disciplines.

e. *Educatory Role of Division*

STRATEGIC ISSUE 19: HOW TO POSITION THE DIVISION TO TAKE AN "EDUCATORY" ROLE ON BIG ISSUES?
Goal 49: Maintain leadership in providing factual information to the public, especially on controversial issues.

Communication and education of the public are extremely important if the Division is to move toward a stewardship role in wildlife management in the State. Divisive issues such as predator control embroil the Division, often damaging our credibility with one or more segments of public in spite of our attempts at remaining neutral or silent on issues driven by the public's values, not biology. In spite of the fact that the most controversial issues are not biological in nature, the Division should strive to maintain the public's confidence by engaging in the debate as a neutral party and transferring the best biological, economic and social information to the public that we can obtain.

3. Career and Professional Development

a. Career paths for researchers and managers
- i. *Pay Scale Issues*
- ii. *Diversity in the Workforce*

STRATEGIC ISSUE 3: HOW TO DEVELOP AN ADEQUATE CAREER PATH FOR BIOLOGISTS AND RESEARCHERS?
Goal 9: Establish an expanded career path for researchers and managers.
Goal 10: Establish a scale of pay equitable with other professional biologists in Alaska.
Goal 11: Increase diversity staff in the Division's work force.
Goal 12: Establish cooperative education program in DWC

Staffing issues continue to plague the Division. The workgroup discussed many these briefly, including the difficulty technicians have in bridging the gap between the FWT and the WB series, the lack of a true career ladder for research and management biologists, and pay equity for equivalent jobs in private and federal agencies. We felt that expansion of the FWT series may allow the Division to retain excellent technicians. Additionally new positions in the WB-I and WB-II series might better balance the pyramid and provide a pool of training level positions. However, we did not devote a substantial amount of time to these important issues because we were informed that the Division is currently addressing them. In addition to the recommendations that we expand the career path for research and management biologists, and strive for pay equity,

the workgroup also agreed that the Division should work to increase the diversity of our staff (i.e., hire and train more women and minorities, particularly Alaska natives). To achieve the latter, we should develop programs to encourage career development, including the establishment of an effective cooperative education program.

b. Training and Continuing Education

i. *Conferences and meetings*

STRATEGIC ISSUE 2: HOW TO ASSIST AND ENHANCE TRAINING AND EDUCATION OF STAFF? Including how to get staff to conferences?
Goal 8: Maintain and enhance a highly qualified and well-trained work force by providinge opportunities for professional growth.

Like career paths and pay equity, training and continuing education of staff was identified as an important issue, but was not discussed at length because the PEER Committee has previously addressed it. Nevertheless, the workgroup agreed that both research and management biologists should be encouraged to participate in professional organizations or societies, including attending conferences and annual meetings. The Division should view attendance at conferences as a form of continuing education or training for its staff.

c. Workload Relief

STRATEGIC ISSUE 25: HOW TO ACHIEVE EXCELLENCE IN THE FACE OF HIGH WORKLOAD DEMAND?
Goal 3: Provide workload relief and support so that management staff can participate in research projects.
Goal 4: Provide workload relief and support so that management personnel can participate in public involvement projects, planning, BOG, etc.
Goal 5: Add staff in area offices whenever possible to help with workload.

Virtually every participant noted that chronically high workloads are: 1) reducing the quality of our work; 2) causing some core responsibilities to be neglected; 3) precluding training; and 4) interfering with communication (e.g. management staff participating in research projects). These issues reduce staff morale and could make it difficult to attract and retain high quality employees in the future. Supervisors, researchers and managers experience high workloads; however, this problem is most pronounced for Area Biologists. Some factors that have increased workloads include human population demographics (more users), increasing public participation in wildlife management, dual state-federal management, increased time spent by AB's

in the BOG process (more proposals), and increased conflicts among user groups. We concluded that high workloads are not the result of current Division structure. Rather, they are being caused by job demands increasing more rapidly than staffing.

We repeatedly noted that additional staff is needed in area offices to reduce workloads and meet Division responsibilities. Staffing was too complex to allow this group to consider specific positions. Instead, we recommended the Division conduct a systematic evaluation of staffing needs. We favored contracting an outside source to conduct the audit. We agreed the Division should ensure flexibility among regions, area offices and statewide programs when creating and filling new position: no single approach will probably work throughout the Division. The roles of some existing positions, especially Area Biologists, may change in the future as new positions are created. Area Biologists may become team leaders that coordinate planners, education outreach specialists, species experts and researchers. Regional staff may be stationed in area offices to share workloads.

4. Wildlife Management Issues

a. *Political Damage Control*

i. *Predator Management*

STRATEGIC ISSUE 13: SHOULD WE BE DOING PREDATOR MANAGEMENT?
Goal 36: Continue to investigate publicly acceptable methods of predator management.
Goal 37: Engage the public in predator management discussions and implementation

Predator management is a political issue that, at times, drives the Division beyond distraction. Biologically, it is a matter of allocation of scarce prey resources, and when properly implemented, does not impugn the Division's mission of conserving Alaska's wildlife populations. Nevertheless, it is an issue we seemingly have little control over. In spite of the fact that this is largely an external political issue, driven by emotions and values of people that probably cannot be changed, the workgroup agreed that it is necessary for the Division to be actively involved in attempting to develop solutions, rather than passively be forced into reactive management programs that potentially damage the Division's credibility. The workgroup agreed that predator management, including predator control, is an activity that the Division should be engaged in when the public so desires, that the Division should encourage the public to be actively involved in predator population management, but that we should be diligent in maintaining neutrality and not advocate predator control. The Division should actively investigate alternative methods of predator management that may be more acceptable to the public, and continue to provide the public with accurate, unbiased biological information to help them form rational decisions. Furthermore, the Division should engage the public in discussions

about predator management, and perhaps even resurrect the now moribund predator management plan for the State.

ii. Subsistence

STRATEGIC ISSUE 14: HOW TO MANAGE FOR SUBSISTENCE – HOW TO SHOW RELEVANCE OF RESEARCH AND MANAGEMENT?
Goal 38: Communicate the dilemmas and disastrous consequences of the current method of subsistence management.

We recognized subsistence management is critically important to the Division and State but is largely beyond our control. Therefore, we recommended the Division actively emphasize to the legislature, governor and users that all wildlife management should be returned to the State.

b. *Public Process*

i. Co-management and traditional knowledge

STRATEGIC ISSUE 20: HOW TO WORK THROUGH CO-MANAGEMENT AND TRADITIONAL KNOWLEDGE?
Goal 50: Participate in and lead co-management processes.
Goal 51: Seek and consider local, traditional and scientific knowledge for managing wildlife.

We took a broad view of 'traditional knowledge' to include long-term qualitative information by subsistence and non-subsistence, Native and non-Native users of wildlife. Although fundamentally different from scientific information, traditional knowledge can substantially contribute to management decisions and is often the only information available. Incorporating traditional knowledge into management processes facilitates communication and trust between users and staff. Co-management is founded on the desire to meld traditional and scientific information in wildlife management. Co-management has costs as well as benefits: it's sometimes politically driven; there is no way to 'weight' traditional vs. scientific knowledge; it's often viewed as undermining the Advisory Committee system; and co-management can be expensive in terms of money and staff time. Despite the costs, we concluded the Division should take a leadership role in co-management processes and continue to consider local, traditional and scientific knowledge in making management decisions.

ii. Incorporating Human Dimensions

STRATEGIC ISSUE 8: HOW TO DEAL WITH HUMAN DIMENSIONS?
Goal 25: Find ways to incorporate HD information into research and management decision-making.
Goal 26: Form a review process for HD projects that includes managers, researchers and the social scientific community.

The Division should incorporate human dimensions information into wildlife research and management. We recognized that some powerful legislators do not support human dimensions projects. HD projects currently compete with research and management projects for time and money, and require expertise (planners) not yet widely available within DWC. Even so, we felt this information is important and is not being collected by traditional research and management programs. The Division should integrate human dimensions approaches into existing programs rather than create a new section. Human dimensions projects should be reviewed in the same manner as we recommended for research and management programs.

ii. The Advisory Committee System

STRATEGIC ISSUE 24: HOW TO STRENGTHEN THE ADVISORY COMMITTEE SYSTEM?
Goal 59: Maintain local standing committees (AC's) to advise the Alaska Department of Fish and Game and Boards on wildlife issues.
Goal 60: Recommend that DMT/DWC elevate this issue (AC's) to the Commissioner.
Goal 61: Broaden standing committee (AC) representation to include local diversity of wildlife users.
Goal 62: Continue to establish planning teams which include AC's on contentious/major issues.

The advisory committee system works well for advising the Department and BOG/BOF on local issues, and involves the public in management processes. Yet there are problems associated with this system. The system has never been adequately supported in terms of funding or administrative support (Boards has been reduced from a Division to a section). The composition of some ACs is not representative of their communities or areas. Advisory Committees do not work well on large issues that involve nonlocal users or encompass broad geographic areas. In some areas advisory committees and federal RAC committees work separately on issues that affect common populations of wildlife. A few ACs have disproportionate influence on BOG/BOF decisions. We recommend the AC system be maintained; however, the Commissioner

should conduct a review to improve its effectiveness. In addition, planning teams or co-management groups should involve AC members.

c. *Marine Resources*

i. Marine Mammals Management

STRATEGIC ISSUE 21: WHAT SHOULD BE OUR ROLE IN MARINE MAMMAL MANAGEMENT?
Goal 52: Determine status, trends and harvest of selected marine mammals.
Goal 53: Assess impacts of development and climate change on marine mammals.
Goal 54: Strive for consist regulations and permitted uses of marine mammals.
Goal 55: Development conservation programs for species not currently monitored.

Marine mammals, particularly the ice seals in Northwest Alaska and the Beaufort Sea, represent an important subsistence wildlife resource to humans. Once under the jurisdiction of the Division, management authority now resides with NMFS. Nevertheless, by virtue of our guiding principles, we share responsibility for the conservation of these wildlife species, and are duty-bound to provide for their wise use by the public. Although we discussed the option of requesting or working toward the assumption of management authority for marine mammals, there was no consensus on whether this was feasible or wise. Unless the return of marine mammals management authority came with funding to manage, we would be faced with an expensive and contentious management program with little funding to properly implement it.

Although we have no management authority, for those species of marine mammals that are inadequately monitored but are critical to human subsistence needs, we should strive to ensure that their populations are monitored, that impacts of development and climate change on their populations are understood and that conservation plans and programs be developed for their conservation and use. In addition, it is apparent that regulations for the use and sale of marine mammal products, such as ivory and hides, are arbitrary and confusing, and we recommend that the Division rewrite such rules to improve consistency and eliminate confusion among the public.

ii. Oceans and Wildlife Program

STRATEGIC ISSUE 22: SHOULD WE DEVELOP AN OCEANS AND WILDLIFE PROGRAM?
Goal 56: Participate in various "oceans" programs.

The question of whether the Division should develop an "Oceans and Wildlife" Program was discussed by the workgroup. We agreed that many wildlife species are affected by fisheries management and other factors (e.g., regime shifts, global climate change), and, given funding, it would be appropriate for the Division to establish an Oceans and Wildlife Program that addressed these issues and species. Lack of knowledge and expertise on the workgroup precluded us from establishing further goals or recommendations regarding such a program. Please see Strategic Issue #23 and Goal #58 for possible projects.

d. *Land Management and Research*

i. State Refuges and Critical Habitat Areas

STRATEGIC ISSUE 10: HOW TO BETTER MANAGE AND CONDUCT RESEARCH ON REFUGES AND SPECIAL AREAS?
Goal 27: Complete management plans for the remaining special areas.
Goal 28: Increase management efforts on refuges and special areas.
Goal 29: Provide adequate support to complete biological inventories on special areas.
Goal 30: Prevent illegal access on special areas.
Goal 31: Clarify Habitat and Wildlife Conservation roles in management of special areas.

The workgroup discussed the small management and research role we play in refuges and critical habitat areas. It is apparent that there is a lack of priority and funding for the development of management plans on these special areas, and that most are underutilized for research and education of the public. Most special areas have not been inventoried. In some areas, illegal access and use is common. In addition, the roles and responsibilities of Habitat Division and Wildlife Conservation for management, research, and planning are not clear, and this lack of clarity leads to delays in planning. The workgroup recommends that the Division (1) develop a mutually-agreeable timeline with Habitat Division for the inventory of special areas and the completion of management plans for these management units, (2) raise the priority of management and on the use of

special areas for research and education, (3) increase monitoring and enforcement of access and use regulations, and (4provide adequate staff to accomplish tasks (2) and (3).

ii. ORV Impacts on Wildlife and Their Habitats

STRATEGIC ISSUE 17B. HOW TO ASSESS AND RESPOND TO ORV IMPACTS TO WILDLIFE HABITAT
Goal 42: Understand how motorized vehicle use disturbs wildlife.
Goal 43: Understand how motorized vehicle use disturbs habitat.
Goal 45: Understand how motorized vehicles impact other users.

Of the several land use activities that fall outside the purview of the Division and its regulatory authority, ORV use (predominantly all-terrain vehicles and snowmachines) poses several potential threats, for which the Division has little information. Although the workgroup realized our limited ability to regulate ORV use (other than on special use areas), we agreed that our influence on land management agencies to manage ORV use to minimize impacts to wildlife, wildlife habitats, and the non-ORV public (e.g., wildlife viewers) would be greatly increased by factual information regarding their potential impacts on these entities. Therefore, the workgroup recommends the Division engage in new research aimed at quantifying the impacts of ORV's on wildlife and their habitats, regardless of land ownership. On State wildlife refuges and critical habitat areas, the Division should also assess how the general public is affected by ORV's and what they feel is appropriate for their management.

In addition, the workgroup identified that the Division has potentially conflicting positions on motorized vehicle access to public lands. On the one hand, the Division stridently defends motorized vehicle access under ANILCA, but if ORV use negatively affects wildlife and wildlife habitat, then the Division should advocate controlled management of ORV activities. Hence, the division should review current policies, and develop policies that are in accordance with our guiding principles.

iii. Land Management Decisions/Cumulative Impacts

STRATEGIC ISSUES 17b, c: HOW TO INFLUENCE LAND MANAGEMENT DECISIONS IMPACTING WILDLIFE. HOW TO DEAL WITH CUMULATIVE IMPACTS OF DIVERSE RESOURCE
STRATEGIC ISSUE 18: HOW TO MANIPULATE GAME HABITAT ON LANDS WE DON'T CONTROL TO MINIMIZE IMPACTS TO NONGAME?
Goal 44: Create and maintain partnerships with land managers to influence the effects of access and development on wildlife.

Goal 46: Develop better methods and tools for evaluating cumulative impacts.
Goal 47: Inform the public about the consequences of proposed land management actions.
Goal 48: Understand how game and nongame species respond to land use practices at multiple spatial and temporal scales.

We devoted considerable time discussing the Division's ability to influence land management decisions that affect wildlife habitat. Habitat management is a huge issue within the purview of many overlapping organizations (e.g. federal land managers, DNR, DEC, Habitat Div.) with mandates and policies regarding land use that often differ substantially. Even though DWC does not have the ultimate authority to manage lands (except on State wildlife refuges and critical habitat areas), habitat management issues are critical to wildlife management and we should increase our efforts to influence them. We recommend: 1) DWC collect information to understand how land use activities, affect wildlife; 2) create partnerships with land owners and managers to influence land management decisions; 3) take a long-range view of habitat management to consider cumulative impacts of diverse land and resource uses over decades and at the landscape scale; 4) consider the impacts on more than just game species; and 5) inform the public about potential consequences of proposed land management actions.

e. Nuisance Wildlife Program

STRATEGIC ISSUE 16: HOW TO MAKE SURE THE DIVISION HAS A PROGRAM TO MANAGE NUISANCE WILDLIFE?
Goal 40: Review the nuisance wildlife policy and make it practical.
Goal 41: Establish a nuisance wildlife program (refer this to public service work group) to relieve area biologists' workloads.

Concerns about dealing with nuisance wildlife included: substantial staff time required to deal with problem wildlife; poorly trained staff; and liability for public losses or injuries. The Division should develop a policy that will facilitate consistency in dealing with nuisance wildlife while allowing flexibility to best deal with individual circumstances. Ultimately, dedicated staff should be hired to deal with nuisance animal calls.

f. *Key species and ecosystem integrity and sustainability*

i. Impact of Fish on Wildlife

STRATEGIC ISSUE 23: HOW TO AFFECT FISH ISSUES IMPACTING WILDLIFE? HOW TO IDENTIFY KEY SPECIES AND KEY HABITAT AND ARE THEY MANAGED FOR ECOSYSTEM INTEGRITY AND SUSTAINABILITY?
Goal 57: Strive for team or community-based research and management where advantageous.
Goal 58: Influence fisheries management decisions based on wildlife concerns.

Some organisms strongly affect the communities or ecosystems in which they live, and thereby greatly influence the structure and productivity of wildlife populations within those communities. The most relevant example for the Division is the role that salmon play in the health and productivity of brown bears and other wildlife in coastal regions of Alaska. Other obvious examples of so-called keystone species in Alaska might be caribou, beaver, snowshoe hares, and spruce bark beetles. With a few exceptions (e.g., predator-prey relations), the Division rarely engages in multi-species research or management programs to determine and perhaps manage the effects of these species on the community, habitats, or populations of other wildlife species. Perhaps because of jurisdictional restrictions, political difficulties, or lack of information, the Division has not been (or does not appear to be) involved in management decisions regarding allocations or escapement targets for salmon, although these decisions may strongly influence critical or important wildlife populations.

To address these important issues, the workgroup recommends that the Division review existing evidence for potentially important keystone species. We should also engage in community-based research and management where feasible and biologically far-reaching. We should develop a means to influence fisheries management decisions where these decisions have significant impact on important wildlife species and communities.